

ABSTRACT OF THE DISCLOSURE

Disclosed herein is a sensor utilizing attenuated total reflection. The sensor includes a first dielectric block; a thin film layer, formed on a first face of the dielectric block, for placing a sample thereon; and a light source for emitting a light beam. The sensor further includes an optical incidence system for collimating the light beam, and making the collimated light beam enter the dielectric block at a predetermined incidence angle so that a condition for total internal reflection is satisfied at an interface between the dielectric block and the thin film layer; a photodetector for detecting the refractive index distribution of the sample obtained within a plane along the interface, by detecting an image carried by the light beam totally reflected at the interface; and an optical compensation system for compensating for image distortion produced by the dielectric block when the predetermined incidence angle of the light beam varies.